Pregnancy rate following Metformin consumption in patients with PCOS under ART treatment

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Abstract

Infertility with an incidence of about 15% has mainly been one of the community burdens that have even been threatening to the continuity of the family life. One of the most prevalent causes of women infertility is ovarian causes particularly PCOS. Since Metformin may improve quality and increase the number of ova, and likewise increase fertilization rate via reducing the level of insulin, this study was conducted with aim of investigating responses of patients with PCOS in the cycle of ART. This was a randomized clinical trial on 100 infertile patients with PCOS who referred to Shariati Hospital in Tehran during 1999-2000. The subjects were randomly categorized in to 2 groups (A=44 and B=46 women). Ten patients were eliminated from study due to ignoring the treatment plan. Group A received Metformin at a dose of 500 *mg* t.i.d in addition to induction of ovulation with long protocol. The results were analyzed using t-test and X^2 and P<0.05 was considered as significant. Results showed that average level of estradiol in group A was 2159±1056*pg/ml* and 2842±1050*pg/ml* in group B, with a significant difference (P=0.002). We administered 23±7.6 ampules of HMG for the subject's in group A and 31.34±8.12 ampules for those in group B (P=0.001). The difference in number of oocytes was not significant, where as we found a significant difference in the number of germinal vesicle (P=0.047). There were no significant differences in course of treatment, numbers of oocytes and the number of pregnancy between 2 groups. Considering the findings of this study by using Metformin, we improve the quality of ova in patients with PCOS. This happens due to the effect of Metformin through reducing insulin resistance and hyperandrogenism in patients with PCOS leading to a prominent drop in estradiol levels in serum that in turn lowers the need for administration of HMG and result in improving oocyte quality.

Keywords: Metformin, Infertility, Polycystic Ovarian Syndrome and Assisted Reproductive Techniques.

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